Using Oracle BI with Oracle E-Business Suite

How to Meet Enterprise-wide Reporting Needs with OBI EE

NOETIX®

Using Oracle BI with Oracle E-Business Suite

About Noetix

More than 1,400 customers worldwide use Noetix to quickly and cost-effectively access the enterprise application data they need to make important business decisions every day. Noetix provides software that automatically generates metadata from enterprise applications, enabling immediate access to data. Unlike most business intelligence tools that require weeks of extensive manual mapping to be set up and maintained, Noetix uses patented technology to automatically discover and produce metadata based on customers' specific implementations of Oracle E-Business Suite, Siebel CRM, and PeopleSoft Enterprise applications. Noetix provides this business intelligence content with easy search and navigation capability, empowering users to quickly generate the ad hoc, operational reports needed to make critical and timely business decisions. Noetix's proven technology is being used by industry-leading customers worldwide, including: Cummins, Motorola, Starbucks, Toshiba, Welch's, and Visa. The company is headquartered in Redmond, Wash., with international operations in London and Hyderabad, India.

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Executive Summary

Oracle Business Intelligence Enterprise Edition (OBI EE) provides a BI platform that includes many components enabling customers to address their BI requirements for operational, tactical, and strategic reporting.

Customers' reporting needs can be met by combining direct access to data in the Oracle E-Business Suite transaction database with data that has been moved to a data warehouse. Through these two approaches (direct access + data warehouse) customers can achieve all of their BI objectives with OBI EE.

OBI EE is a separate offering from Oracle's BI Applications. Oracle BI Applications are built on OBI EE and require the technology platform for their operation. They provide a specific implementation, with specific benefits and limitations of a data-warehouse-centric business intelligence solution built on top of Oracle's BI platform.

Noetix provides software that enables OBI EE to directly access data within Oracle E-Business Suite. Noetix accelerates the deployment of an enterprise-wide BI initiative by pre-populating OBI EE with essential business intelligence content for use in query, reporting, and analysis. For more than a decade, Noetix has provided "automatic generation" of a business intelligence model for Oracle Discoverer. Noetix provides similar capabilities for OBI EE as well as for other major BI platforms.

In addition, Noetix Analytics offers an alternative to Oracle BI Applications. Noetix Analytics employs an architecture similar to the one provided by Oracle BI Applications: the product includes database views for accessing data in Oracle E-Business Suite, a library of Informatica scripts for extracting and transforming data from Oracle E-Business Suite, data models for the target data warehouse, and a collection of dashboards and reports built on that data warehouse.

Note: Oracle Product Terminology — Oracle delivers their BI suite in two forms: Oracle Business Intelligence Suite Enterprise Edition Plus (OBI EE) and Oracle Business Intelligence Standard Edition One (Oracle BI SE One). Both suites contain all of the components described in this document. Throughout this document, any reference to OBI EE can also apply to Oracle BI SE One.

Contents

Oracle Business Intelligence Suite Enterprise Edition Plus
OBI EE Key Components

The Oracle Business Intelligence Suite Enterprise Edition Plus (OBI EE) combines a BI server with BI presentation tools and specialty BI reporting tools (Hyperion). OBI EE is an integrated suite sharing a common service-oriented architecture; common data access services; common analytic and calculation infrastructure; common metadata management services; a common semantic business model; a common security model and user preferences; and common administration tools. [1]
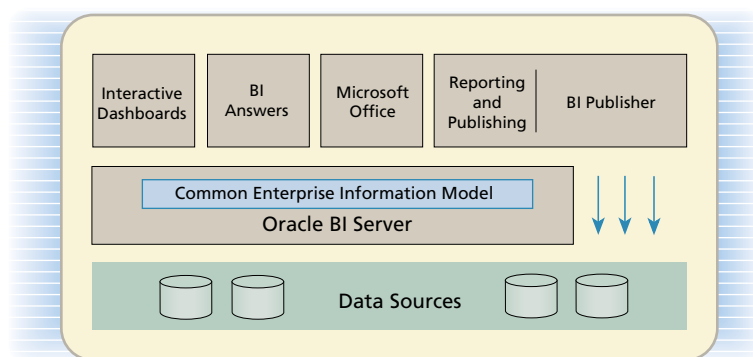
[1] For a more complete description of the suite, please refer to documents published by Oracle such as *Oracle Business Intelligence Suite Enterprise Edition Plus – Technical Overview*

Figure 1 — OBI EE Key Components

OBI EE consists of several interdependent components, built around the Oracle BI Server. Key components include:

- **Oracle BI Server** — a scalable, efficient query and analysis server that integrates data via sophisticated query federation capabilities from multiple relational, unstructured, OLAP, and pre-packaged application sources, whether Oracle or non-Oracle.

- **Oracle BI Answers** — an ad hoc query and analysis tool that works against a logical view of information from multiple data sources in a pure web environment.

- **Oracle BI Interactive Dashboards** — rich, interactive, pure web dashboards that display personalized information to help guide users in effective decision making.

- **Oracle BI Publisher** — a scalable reporting engine capable of generating reports from multiple data sources in multiple formats via multiple delivery channels.

- **Oracle BI Office Plug-In** — automatically synchronizes information from Answers to Microsoft Word, Excel, and PowerPoint.

Oracle BI Applications

It is important to note that OBI EE does not include Oracle's Business Intelligence Applications—prebuilt BI solutions that deliver role-based intelligence to front line employees and senior management that enable better decisions, actions, and business processes. Designed for heterogeneous environments, these solutions enable organizations to gain insight from a range of data sources and applications including Oracle E-Business Suite, Siebel, PeopleSoft Enterprise, and third-party systems such as SAP. These BI Applications include Oracle Financial Analytics, Oracle HR Analytics, Oracle Order Management and Fulfillment Analytics, Oracle Supply Chain Analytics, and other functional areas.

Oracle BI Applications are not required to deploy OBI EE.

Noetix Analytics provides functionality comparable to Oracle BI Applications, using a similar architecture. The functional coverage of Noetix Analytics is broader than Oracle BI Applications, spanning all of the same subject areas, along with Asset, Discrete Manufacturing, Process Manufacturing, Advanced Supply Chain Planning, and more.

Meeting Reporting Needs with OBI EE
Reporting Types

Business intelligence experts typically identify three basic kinds of reports that every business needs. These reporting types are:

- **Operational Reports:** Operational reports support the normal day-to-day operations of the organization. Typical reports include transaction-level reports for invoices, support incidents, inventory levels, order tracking, and head count. Operational reports provide information at a very granular level, typically consisting of data that comes directly from an operational transaction system.

- **Tactical Reports:** Tactical reports are intended for monitoring and responding quickly to a variety of short-term situations. Examples of reports in this category may include payroll summaries for the past week and this week's projections, or inventory levels for last week and projections for the coming week. In addition, these reports may combine information from multiple transactional systems.

- **Strategic Reports:** Strategic reports typically measure similar types of information as tactical reports but often stretch their analysis over longer periods of time. Examples include analyzing sales by region, by time period, or by product line and project profitability, by project type, or by division or by customer. Strategic reports often compare data in year over year or other comparisons over long time periods.

Reporting Needs

| Operational | Tactical | Strategic |

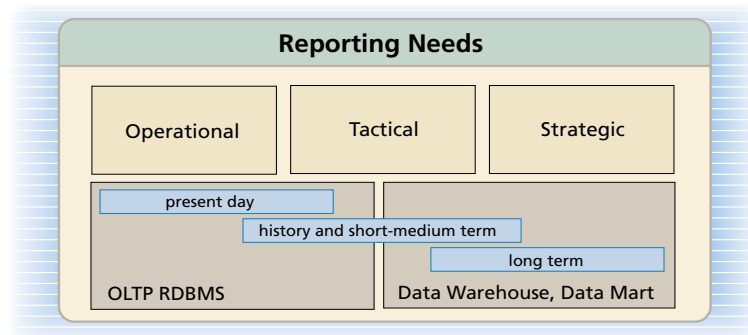| present day |
| history and short-medium term |
| long term |

OLTP RDBMS — Data Warehouse, Data Mart

Figure 2 — The three basic kinds of reports that every business needs

Because OBI EE's architecture is flexible, it provides a foundation for all three types of reporting. For operational and tactical reporting, OBI EE provides the capability to access information directly from the transaction databases themselves. For strategic reporting, OBI EE provides an integrated data warehouse. Oracle BI Applications include ETL scripts to populate the data warehouse along with reports and dashboards that access its information.

Rapid Results without Building a Data Warehouse

Customers can rapidly realize value from their investment in OBI EE without implementing a data warehouse. Delivering operational and tactical reports through direct access to transactional systems is completely compatible with delivering strategic reports through a data warehouse. If a customer does have data warehouse needs along with immediate reporting requirements, they can choose to implement a solution that will easily deliver operational, tactical, and strategic reports while working on their long-term data warehouse initiatives.

Using NoetixViews® with OBI EE

Oracle E-Business Suite (like other enterprise applications) is designed and optimized to process transactions, resulting in complex data structures that are not conducive to reporting. As a result, end users typically rely upon specialized IT staff to meet their ad hoc and operational reporting needs.

Noetix provides software, NoetixViews, that deciphers the maze of tables for you, joins them properly, and conducts the necessary data transformations. With NoetixViews, technical knowledge of the underlying database is not necessary to be able to create ad hoc and operational reports. In simple terms, NoetixViews literally finds the data for you.

Noetix technology has a patented auto-discovery capability that automatically picks up the site-specific setups in the database and includes this information in the Noetix business views. Key and descriptive flexfields and lookup values are included automatically. The result is easy-to-understand, intuitive business content.

With Noetix, non-technical users don't need to know how to construct table joins in order to create and customize their own reports.

Reports developed directly against the base tables risk expensive rework after an application upgrade. Noetix protects reports from these database changes by automatically remapping to the new database structures. This unprecedented feature reduces costly maintenance and development time, freeing a customer's technical resources to focus on other critical tasks.

Noetix Generator for Oracle Discoverer

In 1996, Noetix launched Noetix Generator for Oracle Discoverer. This generator automatically creates business areas for Discoverer's End User Layer (EUL), simplifying setup and ad hoc retrieval of database information from Oracle E-Business Suite. Administrators and users are presented with pre-built and customized business areas within the end-user layer that enhance their ability to view their data in an intuitive format. Noetix Generator for Oracle Discoverer automatically generates predefined drills, predefined joins, lookup values, and folder and item descriptions. Noetix Generator for Oracle Discoverer has helped hundreds of customers gain valuable insight into their businesses by accelerating their ability to develop reports against their Oracle E-Business Suite data.
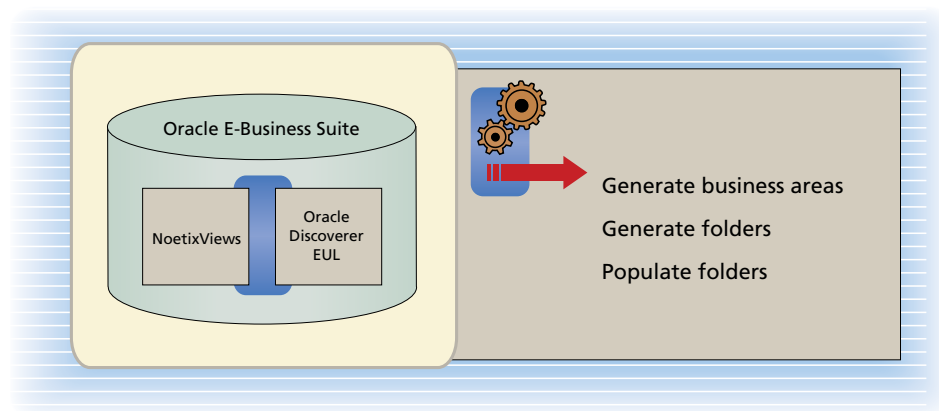

Figure 3 — Noetix Generator for Oracle Discoverer

Noetix Generator for Oracle Business Intelligence

The newest addition to the Noetix Generator family of applications, Noetix Generator for Oracle Business Intelligence, brings those same values to customers using Oracle's BI platform. Noetix Generator for Oracle Business Intelligence will automatically generate a repository model for OBI EE and/or Oracle BI SE One. This repository model includes metadata for the physical layer, the logical model, and the presentation layer. It replicates the key capabilities of Noetix Generator for Oracle Discoverer: predefined drills (achieved through the creation of dimensions in the logical model), predefined joins, lookup values, and folder and item descriptions. In addition, Noetix Generator automatically creates pre-built reports (Noetix answers) in Oracle BI Answers and Oracle Interactive Dashboards, instantly providing a self-service reporting environment for end users.
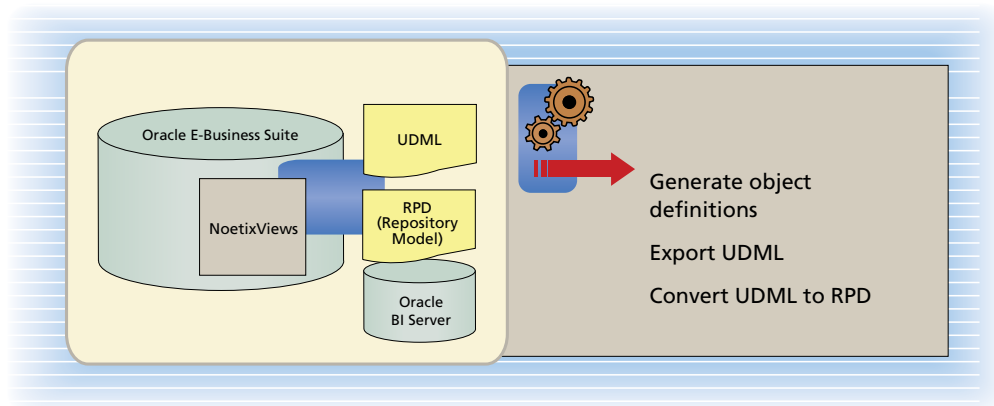
Figure 4 — Noetix Generator for Oracle Business Intelligence

By using NoetixViews and NoetixAnswers together with Noetix Generator for Oracle Business Intelligence, users can rapidly create a reporting environment that provides access to their Oracle E-Business Suite information. This is achieved within days, without the need to create or implement a data warehouse. As a result, customers can quickly deliver success in operational and tactical reporting and immediately realize value from their BI investments.

Noetix Generator for Oracle BI also works closely with Noetix Analytics. The Noetix Analytics data warehouse models (for both the Operational Data Store and the Data Marts) can be automatically delivered into Oracle BI's Enterprise Information Model (EIM). If desired, this EIM can co-exist with the EIM for NoetixViews or Oracle BI Applications, residing in the same repository file.

Performance

Many customers have concerns regarding performance degradation on their transaction system when a reporting solution is allowed to query the same transaction tables at the same time the application users are processing transactions. Customers can avoid this potential impact by making a copy of the database and reporting from that copy, or by creating a data warehouse. Both of these solutions require additional computing resources, software infrastructure, and IT expertise.

In the case of data warehouses, they also typically require extensive software development and high maintenance costs to deliver and maintain just a handful of reports. Not all organizations are able to absorb the extra time, money, and risk needed to make this long-term approach feasible. In addition, there is a very real possibility that a data warehouse project will fall short of the original justifications for it. [2]

Still, data warehouses are valuable and important for many customers. They solve requirements that cannot be addressed through reporting directly against the transaction database. Both Noetix Analytics and Oracle BI Applications provide those data warehouse benefits: data structures optimized for reporting performance, pre-aggregated data for complex analysis, and historical trending. However, some customers mistakenly lean toward a pure data warehouse approach, believing that they need to do so in order to

[2] "Gartner predicted that 50% of data warehouse projects will have limited acceptance or be out right failures."

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achieve adequate performance from their systems.

Another option, a real-time solution, is a viable alternative to launching a full-blown data warehouse project. Through a well-designed, thoroughly tested, and adaptable real-time solution, performance impacts are tremendously reduced, while the speed with which organizations can gain access to their data increases dramatically. With this approach, the cost to develop each report is reduced substantially at the same time.

NoetixViews Provides a Real-Time Solution

The business views have been designed and optimized to minimize impact on the transaction system. When used with a modern BI platform (such as OBI EE) they provide a compelling framework for efficient reporting from the transaction system.

Optimized Design

Each view is designed to be used in certain ways that return data promptly while assuring there will be negligible impact to the transaction system. With few exceptions, each view has a driving table.[*] Filters on the indexed columns of the driving table result in fast response.

[*] When a query joins multiple tables together, the driving table is the one the RDBMS processes first in the join. By carefully controlling which table is the driving table, the author of the query can optimize its performance.

Use of Indexes

Indexes on database tables make the retrieval of rows from that table a more efficient process and can result in report execution times dropping from minutes to just a few seconds. The patented, automatic generation process that creates NoetixViews identifies and highlights all columns for which indexes exist in the underlying tables. This information (which is provided in the automatically generated documentation) allows users to specify parameters and filters using these indexed columns, resulting in reports that will execute more efficiently.

Market Tested

More than 1,400 customers use NoetixViews to access the broadest possible range of data volumes and system configurations possible. Over the course of 15 years, Noetix has worked with these customers to continually refine and improve the views and their performance. Sometimes this results in "optimizer hints" embedded in the view definition. For other views, it means providing "best practices" to customers for gathering database statistics. In all cases, customers can rely on those years of experience and fine tuning.

More than 1,400 companies worldwide have adopted Noetix solutions, including many Fortune 500 companies.

Adaptable Technology

Occasionally, unique customer situations yield unique performance requirements for individual views. In those cases, optimization scripts can be created to further tune the view specifically for that environment.

Tools for Managing Report Execution

All major BI platforms (including OBI EE) provide tools to manage report execution, including scheduling and caching. These tools allow the administrator to control who runs reports, when they run, for how long they are allowed to run, and a variety of other controls. With those administrative controls, IT organizations can further ensure that all of their interdependent systems work efficiently.

Summary

Oracle Business Intelligence provides a powerful, flexible, robust BI platform. It is suitable as the foundation for meeting virtually all of an organization's BI needs, spanning operational, tactical, and strategic reporting requirements. At its center, the Oracle BI Server provides access to both operational systems and data warehouses.

Because of the power in the BI Server, customers don't need to wait until they've completed a data warehouse implementation before they begin to realize value from their BI investments. Instead, they can adopt an approach that addresses operational and tactical reporting requirements by directly accessing the data in their transactional systems. There are a variety of tools and techniques available to ensure that performance is satisfactory, both for operational reporting solutions running directly against the transaction system and for data warehouses, which have a separate, dedicated data store that has been optimized for reporting.

When the transactional system is the Oracle E-Business Suite, Noetix provides a family of products that accelerate that "time to value," allowing customers to access the information in their applications quickly and easily. The combination of NoetixViews and Noetix Generator for Oracle Business Intelligence provides a strong solution for customers who want to achieve value quickly from their investment in OBI EE or Oracle BI SE One. In addition, Noetix Analytics (together with Noetix Generator for Oracle Business Intelligence) offers a cost-effective alternative to Oracle Business Intelligence Applications, with broader functional coverage.